STUDER

A80/VU MK II/MK III

STUDER A80VU-24-2" MK III
twenty-four track, 2" tape width

Combine the assets of traditional Swiss craftsmanship, superior quality, functional design and modern technological capabilities and you have the basic ingredients for the company that has become legendary in the field of professional sound recording:

STUDER

More than 30 years have passed since the first STUDER recorder was introduced, yet from that moment forward the name has commanded respect throughout the world. STUDER's ongoing research and development programs have resulted in many significant breakthroughs, and these, along with a reputation for building the most durable tape machines in the world have placed the name of STUDER in an exclusive position: synonymous with excellence in the industry.

Yet in addition to the constant quest for perfection and innovations, STUDER has sought to maintain a realistic price structure making it possible for the most cost-conscious operations to work within their budgets and not sacrifice engineering excellence.

The STUDER A80/VU Mark II and III Studio models have commanded the highest respect of the professional recording community for the past ten years. The A80VU recorders maintain a solid reputation for versatility and dependability. These qualities have insured the tremendous popularity of the A80 series throughout the world.

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twenty-four track, 2" ta vi
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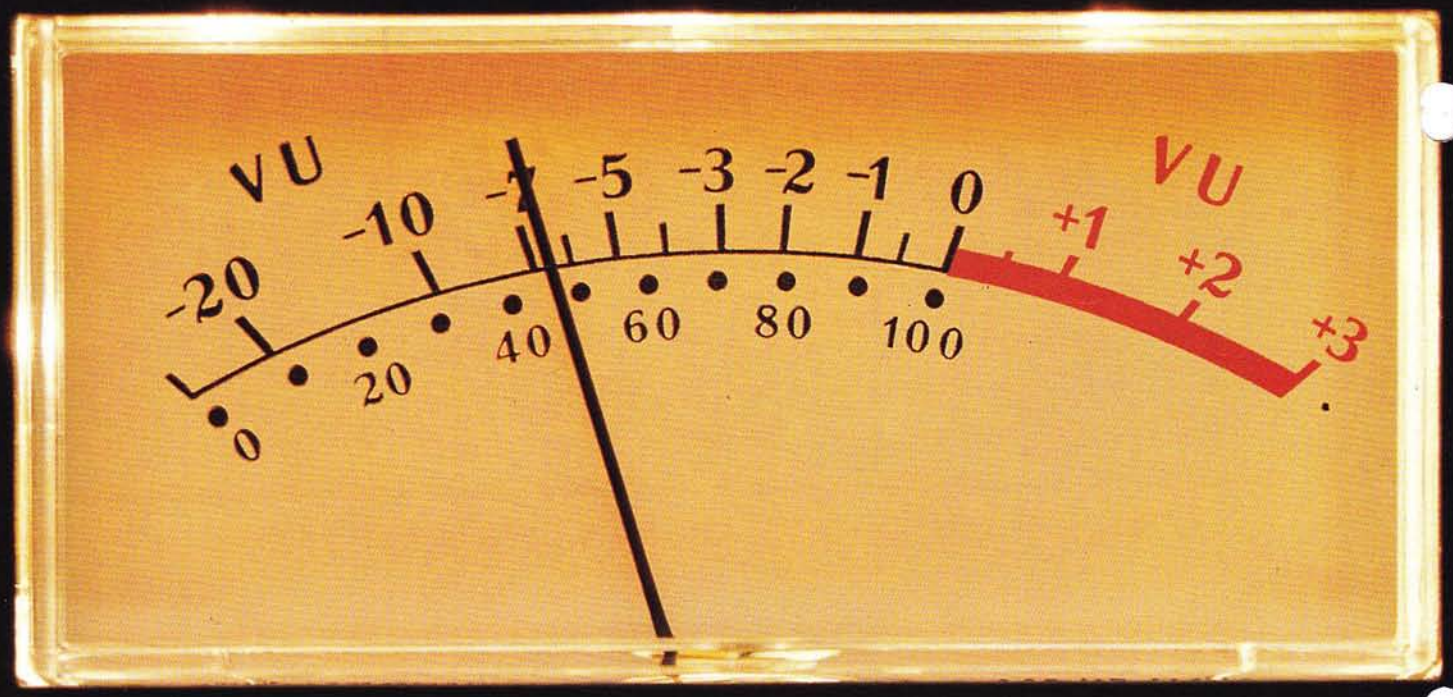
STUDER



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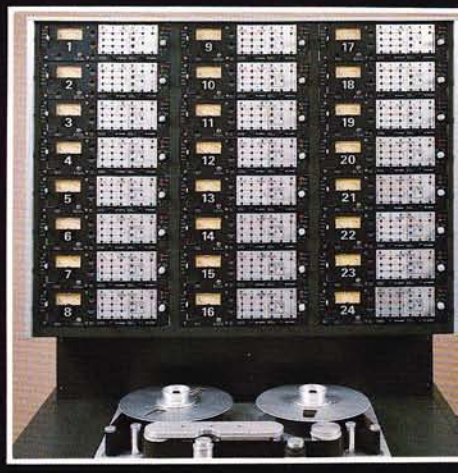
A80VU-24-2" MK III, twenty-four track recorder. Available in standard console as shown or in compact console with 8 amplifiers underneath the transport.



CONTROL
OUTPUT

The A80 family of professional recorders is designed to cover a wide range of applications from 24 track recording studio, to mono/stereo Radio & TV Broadcasting, as well as disc mastering.

Whether 24, 16, 8, 4, 2 track or mono, each A80 is designed to meet the most demanding challenges of today's recording industry. STUDER's reputation for craftsmanship and durability means consistently reliable performance. The marriage of compatible systems reflects STUDER's emphasis on efficiency and simplification, and displays the enormous sophistication necessary to translate philosophy into reality.

RECORD LEVEL

A stable high quality precision manufactured die-cast chassis is the foundation of every STUDER A80VU recorder. It guarantees that specifications can be maintained over decades of years and reflects STUDER's no compromise philosophy. All A80's feature electronic tape transport logic and switching of motors is done with solid state devices for best reliability. The spooling motors in the A80 are servo-controlled in order to maintain constant tape tension in all operational modes. This insures minimum slippage at the capstan shaft, excellent wow and flutter characteristics and very gentle tape handling. With maximum protection of the tape in mind, the straight line tape path on the A80 eliminates the need for tape lifters which could result in unnecessary tape wear. No stationary tape guides are used throughout the entire tape path. The servo-controlled capstan motor provides tape speed stability independent of line frequency or voltage fluctuation. Variable speed control capability of ± 7 semi-tones is a standard feature of this servo system.

The STUDER A80VU transports are combined with highly sophisticated audio channel electronics. Every amplifier channel is a self-contained unit with its own voltage regulator, playback, record, and switching electronics. The channel electronics versatility is further enhanced by the availability of a variety of logic control circuits which make the machine adaptable to any of the world markets.

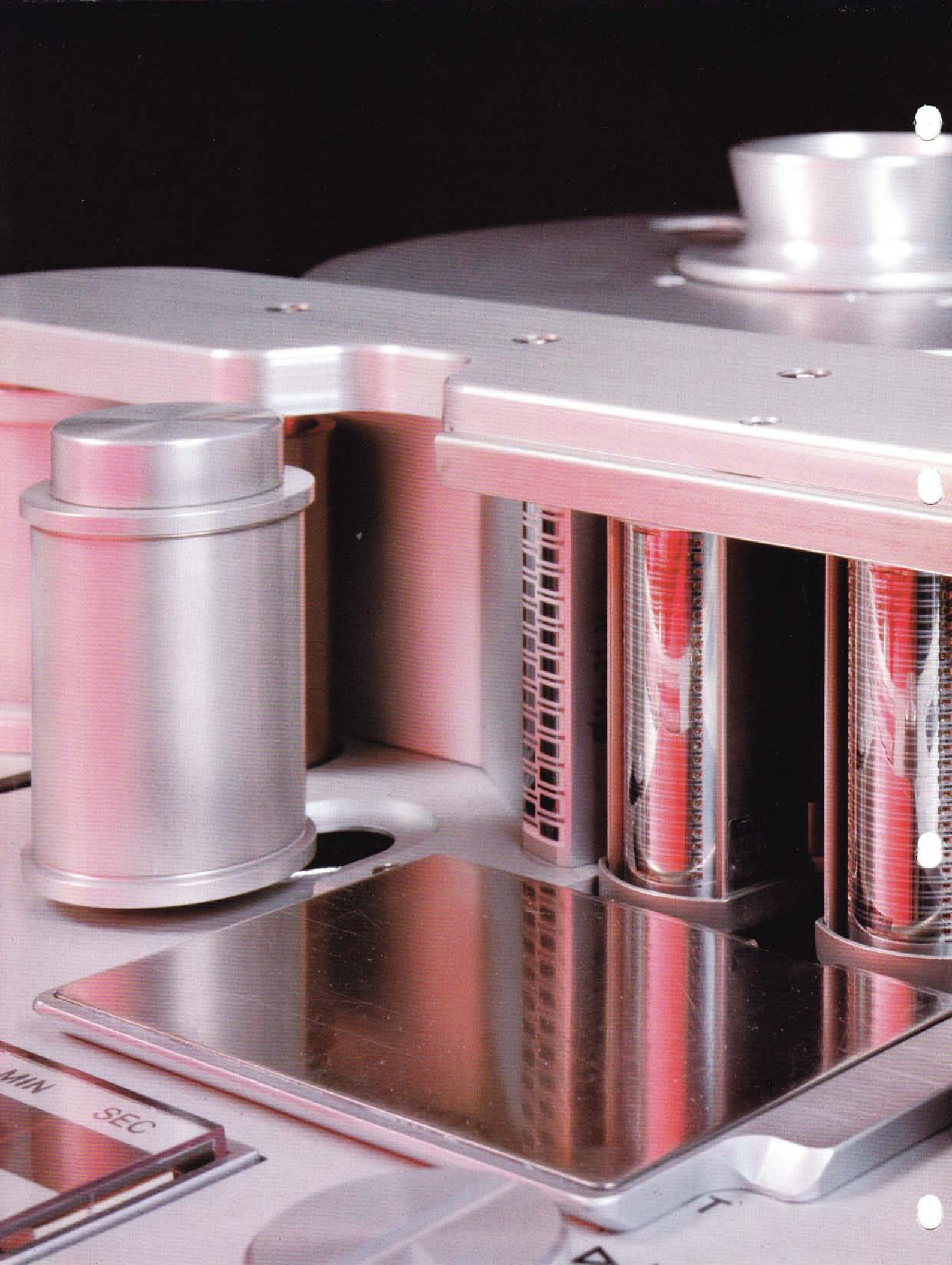
Professionals seek perfection, and the tools with which to attain it. Those most likely to succeed will do so with STUDER.

REPRODUCE LEVEL

A80VU-8 MK II, 8-track recorder on one inch tape format. Also available in 4-track on either one inch or ½ inch tape. Both 4-track recorders are fully prewired for later expansion to 8-track. Special low speed versions for production of "duplicating masters" available (A80MR series).

A80VU MK II 2-track or mono, production and master recorder. Available in ¼ inch or ½ inch tape formats. This machine offers a selection of head configurations that include full track mono, 0.75 mm stereo, 2mm/2-track and stereo on ¼ inch tape, and 2-track stereo on ½ inch tape. This machine has sophisticated editing facilities, and its electronics are fully compatible with A80VU series multi-channel machines.

A80VU MK II Prelistening. A special version designed for use in disc cutting systems. Special amplifiers with a preview head provide the advance information required to control the cutting lathe. Selectable tape paths provide 0.5 or 0.6 revolution delay at tape speeds of 7.5, 15 or 30 ips and disc speeds of 33⅓ and 45 r.p.m. (1 revolution delay possible at 7.5 and 15 ips tape speed). All head configurations are available including 2-track on ½ inch tape, and all machines are fully compatible with Neumann lathes.

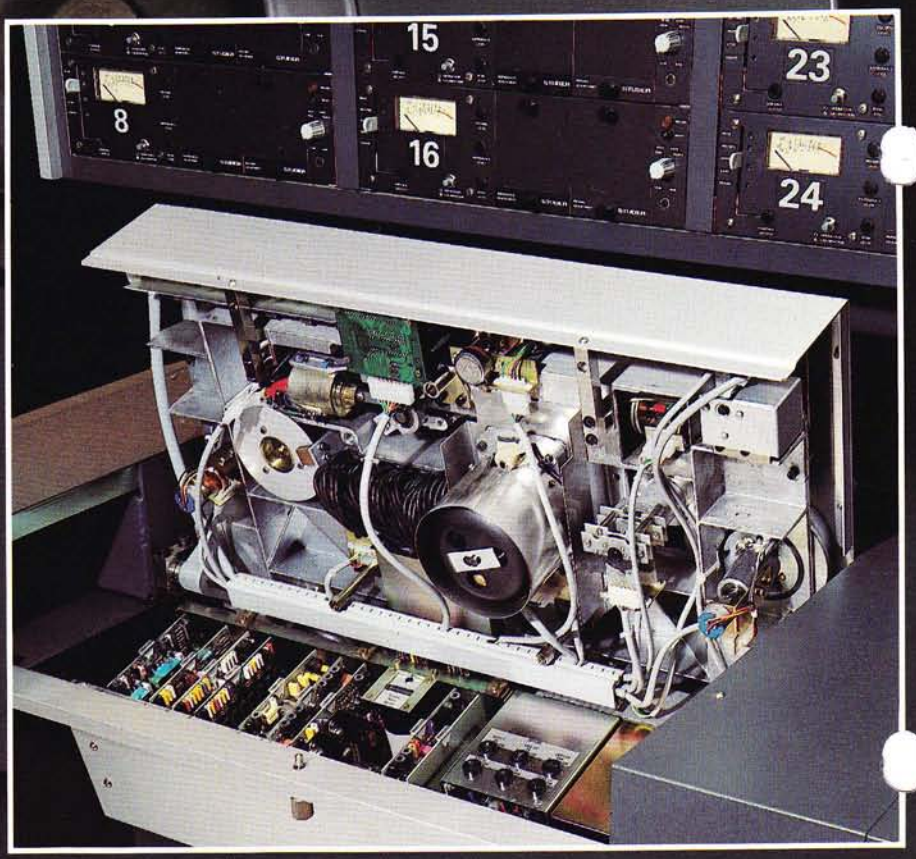

MIN
SEC

The precision manufactured alloy sound heads by STUDER ensure very long life and excellent stability throughout their lifetime. The record head is designed for best possible crosstalk rejection without sacrificing its frequency response performance. The characteristics of the STUDER record heads make "track bouncing" even to adjacent tracks possible. The erase head, with overlapping tracks, is placed in close proximity to the record head facilitating excellent conditions for tight punch-in/punch-out operations. Azimuth of record and playback heads can be readily adjusted when the head cover is removed. The complete die-cast headblock assembly can be easily removed when changing to another head configuration.

The A80VU transport chassis may be rotated during operation to provide easy access to all test points and controls for any necessary maintenance or adjustment.

A solid aluminum die-cast chassis is used as a rugged base for all sub-assemblies. The sub-assemblies may be exchanged as easily as changing a PC board, thanks to precision mounting surfaces and "Plug in" connections. Virtually all assemblies are interchangeable between any type of A80VU machine since identical sub-assemblies are used throughout the A80VU series. The control electronics for the tape transport are located beneath the chassis, and electronics are mounted on plug-in PC boards.

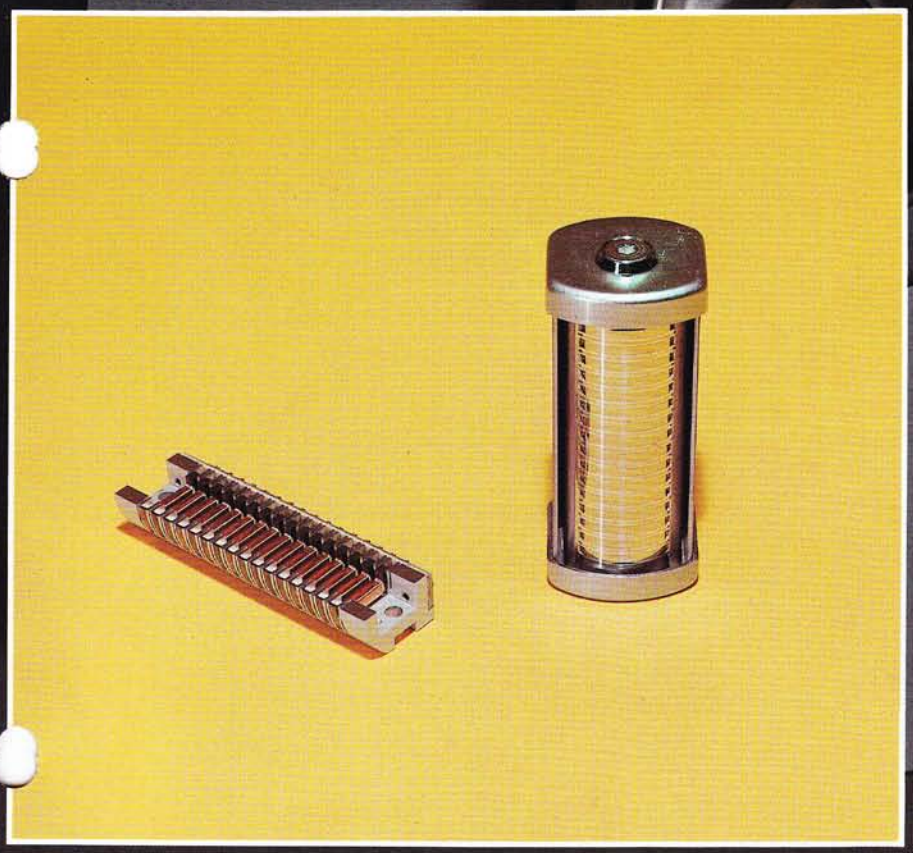
Test points on every individual PC board make trouble shooting an easy task.



An Optical end of tape sensor is standard on all A80VU recorders. This sensor deactivates the electronic tape timer and initiates the stop mode at the end of the tape.

The quarter inch tape versions of t A80VU series feature sophisticat editing facilities. Scissors, tape marker and splicing block are standard and enable fast and accurate splicing. When used in conjunction with the variable spooling control and solenoid tape tension sensor locks, editing efficiency is greatly increased.

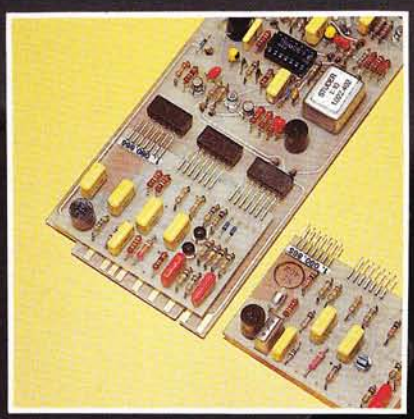
The A80 transport control pushbutton assembly includes electronic tape timer and return-to-zero locator. Negative and positive times (with reference to the zero point) are displayed in "real time" (hours, minutes, seconds) for any selected nominal tape speed.



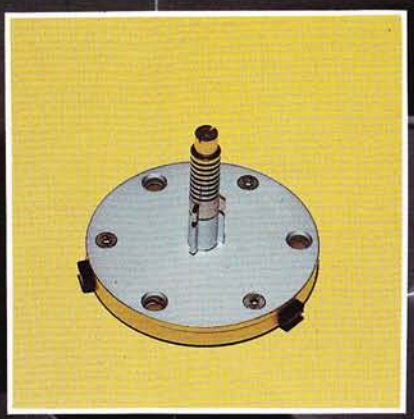
Since the record and playback heads are such critical components in the performance of any tape machine, the highest possible manufacturing precision is mandatory. That's why the sound heads in STUDER machines have been designed and manufactured exclusively by STUDER engineers for the past 30 years.

Multitrack heads designed for up to 24 tracks require that precise gap dimensions be maintained across their entire width. During manufacturing, the head halves with their respective pole pieces are lapped and placed in a vacuum chamber, where a precisely metered vapor of silicon-monoxide is deposited on the entire gap surface. This process assures uniform gap length and minimum "gap scatter" between tracks, over the entire width of the head.

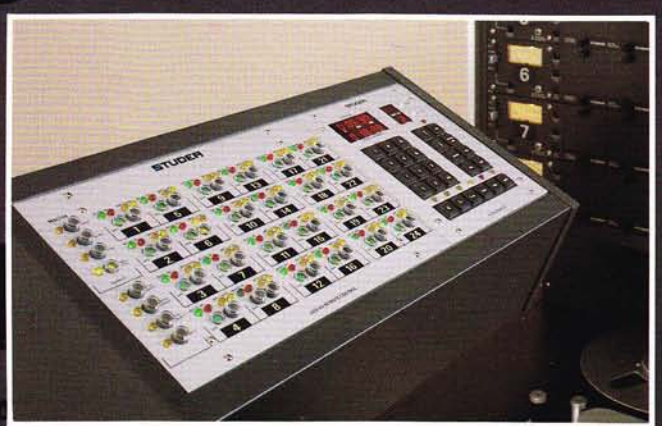
The alloys selected for STUDER heads have excellent magnetic properties and maintain a high resistance to abrasion. The careful selection of these materials is another reason why STUDER heads offer optimum performance characteristics for years.



ug in equalizer boards fit onto the andard record and playback amplifiers making adaptations to future standards an easy task. Each equalizer contains all elements necessary for both NAB and CCIR equalizations. Either of these standards may be selected by a switch on the front of each individual channel amplifier.

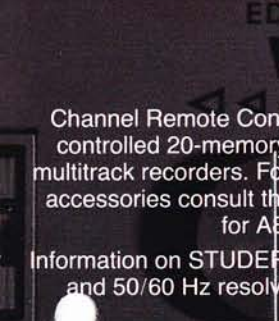


Quick release reel adapters simplify the change from NAB/CINE to DIN type reels on the A80VU mono and 2-track versions.



Channel Remote Control and microprocessor controlled 20-memory autolocator for A80VU multitrack recorders. For detailed description of accessories consult the "Remote Accessories for A800/A80/A81" brochure.

Information on STUDER SMPTE code interlock and 50/60 Hz resolver systems available on request.



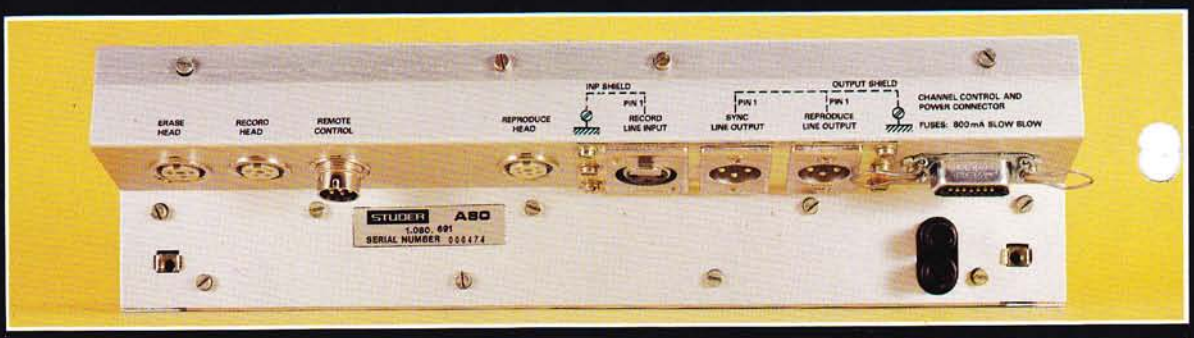
The A80VU machines are equipped with modular amplifier channels containing individual plug-in boards for each function. Separate PC boards are utilized for voltage regulation, recording, playback, sync playback, control logic, and metering.

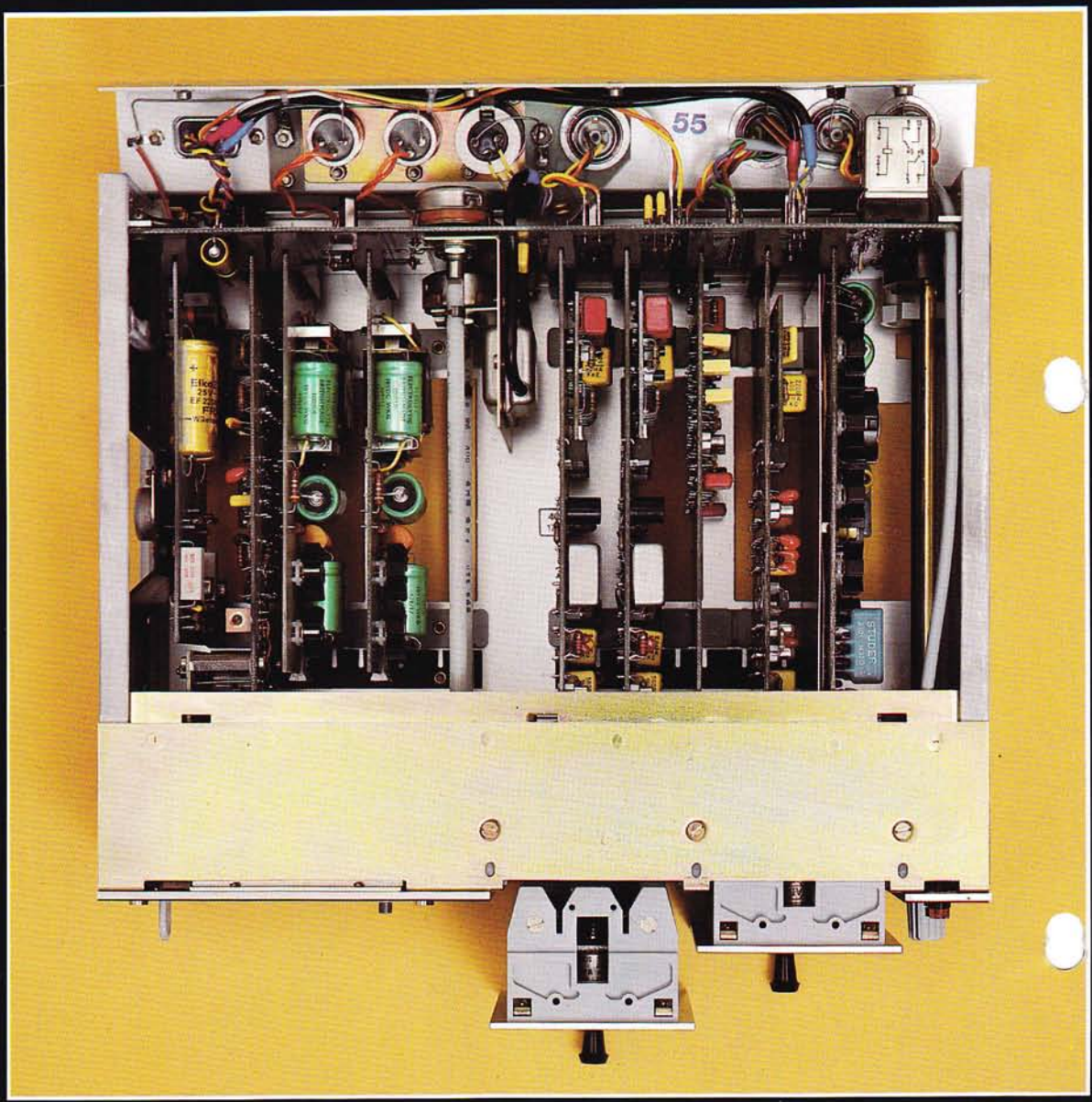
Passive plug-in equalizer units for record and reproduce/sync contain all alignment controls. This allows the standard PC boards to be interchanged between channels without adjustment. Color coded controls simplify alignment procedures, and may be covered to discourage unauthorized adjustment. Separate alignment controls are provided for sync playback in order to match reproduce and sync playback characteristics as close as possible. There is an independent set of record, reproduce and sync alignment controls for each tape speed.

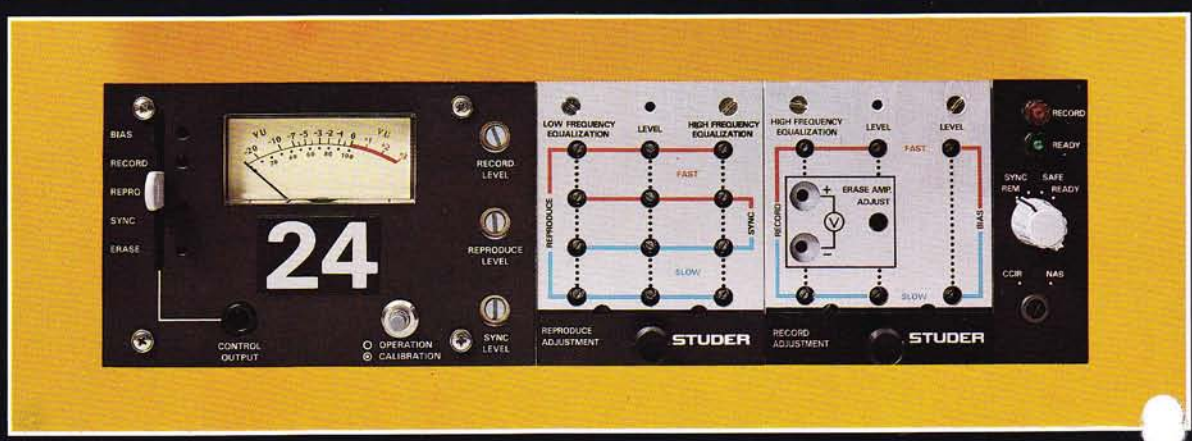
For mode switching and signal routing, reliable "click-free" solid state switching is used throughout the amplifier. All functional modes may be remotely controlled, and signals are provided for remote status indication. In addition, switching signals are available for external noise reduction units. Each amplifier contains its own VU meter module with selector switch, which is capable of indicating Bias current, record level, reproduce level, sync level and erase current. The VU meter itself is amplifier buffered and its zero VU reference can be calibrated over a wide range. Interstage metering for initial level matching is provided by an individual calibration switch on each channel. All of these signals can also be monitored on the front panel by headphones or oscilloscope.

Switching to either NAB or CCIR equalization is possible on each channel individually. No realignment is necessary when changing from one standard to the other because precision components are used throughout the equalization networks ensuring very small tolerances.

To enhance the versatility of the A80VU channel module, two line outputs provide the possibility of separately switched signals for sound effects or monitoring.







STUDER A80VU MK II/MK III
Technical Specifications

Tape Speeds:	7.5 ips and 15 ips ±0.2% or 15 ips and 30 ips ±0.2% (adjustable)
Reel type:	¼" versions: DIN, NAB, Ciné up to 12" (300 mm) reels, ½"-2" versions up to 10½" (267 mm) reels, NAB hub
Tape slip:	0.1% max.

Wow and flutter: ■ according to IEC 368/DIN 45507, peak value, weighted	**7.5 ips**	**15 ips**	**30 ips**
	0.06% max	0.04% max.	0.04% max.

Tape timer:	±0.2% accuracy, indicating hours, minutes and seconds. Real time indication for any selected tape speed. Timer combined with return to "0" locator
Rewind time:	approx. 100 sec for 2400 ft (730 m) reel
Starting time:	0.5 sec max. to reach 0.1% flutter peak value weighted
Line inputs: Minimum input level: Maximum input level:	balanced and floating; input impedance 8 kohms, 30 Hz...20 kHz −14 dBm for 185 nWb/m tape flux +22 dBm
Line outputs: Maximum output level:	balanced and floating; output impedance 30 ohms max. (minimum load impedance 200 ohms) +24 dBm into 600 ohms

Equalization: (switchable)	**7.5 ips**	**15 ips**	**30 ips**
NAB	50 µs/3180 µs	50 µs/3180 µs	17.5 µs
CCIR	70 µs	35 µs	17.5 µs

Frequency response: record-reproduce	**7.5 ips**	**15 ips**	**30 ips**
	30 Hz–15 kHz ±2 dB	30 Hz–18 kHz ±2 dB	50 Hz–20 kHz ±2 dB
	60 Hz–12 kHz ±1 dB	60 Hz–15 kHz ±1 dB	60 Hz–18 kHz ±1 dB

Sync frequency response:	**7.5 ips**	**15 ips**	**30 ips**
With roll-off filter:	60 Hz..8 kHz ±2 dB	40 Hz..12 kHz ±2 dB	60 Hz..12 kHz ±2 dB
Without filter:	60 Hz..10 kHz ±2 dB	40 Hz..18 kHz ±2 dB	60 Hz..20 kHz ±2 dB

Signal to noise ratio: ■ referred to 6 dB above operating level* (unweighted noise in accordance with NAB standard)

Record-Reproduce:

Speed	full track ¼" tape	0.75 mm stereo ¼" tape	2 track/stereo ¼" tape	2 track stereo ½" tape
7.5 ips	74 dB	71 dB	70 dB	72 dB
15 ips	75 dB	71 dB	70 dB	72 dB
30 ips	76 dB	73 dB	72 dB	74 dB

Record-Reproduce:

Speed	4 track 1" tape	4 track ½" tape 8 track 1" tape 16 track 2" tape	24 track 2" tape
7.5 ips	72 dB	70 dB	66 dB
15 ips	72 dB	70 dB	66 dB
30 ips	74 dB	72 dB	68 dB

Record-Sync:

Speed	4 track 1" tape	4 track ½" tape 8 track 1" tape 16 track 2" tape	24 track 2" tape
7.5 ips	68 dB	67 dB	61 dB
15 ips	68 dB	67 dB	61 dB
30 ips	68 dB	67 dB	61 dB

Distortion: ■ via tape at 1 kHz (3rd harmonic), NAB equalization at operating level*:	**7.5 ips**	**15 ips**	**30 ips**
	1% max.	1% max.	1% max.

Distortion: electronics only, NAB equalization, 1 kHz at 1020 nWb/m:	**7.5 ips**	**15 ips**	**30 ips**
	0.2% max.	0.2% max.	0.2% max.

Crosstalk rejection: Reproduce at 15 ips Record channel to adjacent Sync reproduce channel at 15 ips:	40 dB min. 80 Hz...15 kHz up to 16 track machines; 40 dB min. 100 Hz...15 kHz 24 track machines 22 dB min. at 1 kHz, 10 dB min. at 10 kHz up to 16 track machines 18 dB min. at 1 kHz, 4 dB min. at 10 kHz 24 track machines
Erase efficiency:	75 dB min. at 1 kHz
Erase frequency:	80 kHz
Bias frequency:	240 kHz
Power requirements:	100...120 V, 200 V...240 V ±10% 50 Hz–60 Hz, 320 VA–1000 VA depending on number of tracks

■ measured with 3M 250 tape or equivalent * operating level (510 nWb/m tape flux)

Figures quoted are minimum performing values normaly exceeded by all units.

We reserve the right to make alterations as technical progress may warrant.

Designed and Manufactured in Switzerland

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